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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Cheng-Yi Lu

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EXAMINER

CHANDRAN, BIJU INDIRA

ART UNIT

PAPER NUMBER

2835

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/743,721	Applicant(s) LU ET AL. m	
	Examiner Biju Chandran	Art Unit 2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-12,14-17 and 19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-12,14-17 and 19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 4, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey et al. (U.S. Patent 6,042,474) in view of Salmen et al. (US 2002/0094283 A1) and further in view of Perazzo (U.S. Patent 6,813,152 B2).
 - Harvey et al. disclose a heat dissipation module (10) with twin centrifugal fans, comprising: a panel (18A) disposed the front surface of the heat dissipation module (10); a first fan (22) having an first outlet (32) coupling to an inner surface of the panel, and the first fan sucking a part of hot air (56) generated by an electrical equipment and exhausting the part of the hot air out of the heat dissipation module by way of the first outlet and the panel; an air duct (34) coupling to the inner side of the panel and on a top of the first fan; a second fan (24) having a second outlet (40) coupling to a rear side of the air duct, and the second fan sucking another part (58) of the hot air generated by the electrical equipment and exhausting part of the hot air out of the heat dissipation module by way of the second outlet,

the air duct and the panel; an upper cover and a bottom cover, where the upper cover and the bottom cover are utilized to couple with the first fan and the second fan. Although Harvey et al. indicate that the dissipation module is designed with the ability to slide and couple to the electrical equipment while the heat dissipation module is being inserted into the electrical equipment (column 4, line 60), they do not explicitly indicate that the edges of the upper cover and the bottom cover are provided with sliding rails on both sides of the first fan and the second fan of the heat dissipation module. Salmen et al. disclose a fan module (10) with edges of the upper cover and the bottom cover provided with sliding rails (figure 5). At the time of the invention, it would have been obvious to one of ordinary skill in that art to incorporate the sliding rails on the edges of the top and bottom cover as taught by Salmen et al., on the heat dissipation module disclosed by Harvey et al. to ensure that the modules are properly inserted and positioned inside the electrical equipment (paragraph 0029). Harvey et al. do not also disclose that the panel disposed on the front surface to be of honeycomb structure. Perazzo discloses a heat dissipation module with front panel having a honeycomb structure. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the front panel of Harvey et al. with the honeycomb panel taught by Perazzo to increase the volume of airflow

through the panel while eliminating safety concerns (Perazzo, column 5, lines 30-45).

- With respect to claim 4, Harvey et al. further discloses that the heat dissipation module further comprises a locking device (20) to fix to the electrical equipment after the heat dissipation module is installed in the electrical equipment (column 4, lines 60-65).
 - With respect to claim 7, Harvey et al. further discloses a spring device (11), which will absorb vibrations and remove an electromagnetic wave (column 5, line 10).
2. Claim 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey et al. modified by Salmen et al. and Perazzo as applied to claim 1, and further in view of Varghese et al. (US 2001/0037985).
- Regarding claim 2, Although Harvey et al. disclose that the heat dissipation module slides into the electrical equipment, they do not expressly disclose sliding rails on the electrical equipment. Varghese et al., discloses an electrical equipment with rails (18) for slidably mounting electrical modules. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the sliding rails taught by Varghese et al., in an electrical apparatus that uses the heat dissipation module taught by Harvey et al., for increased ease of

installing and removing the module for servicing etc. (Varghese et al., paragraphs 0006-0007).

- With respect to Claim 3, Harvey et al. further discloses that the electrical equipment is a computer server system (column 4, line 57; column 9, line 1).

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey et al. modified by Salmen et al. and Perazzo as applied to claim 4, and further in view of Bonet (U.S. Patent 6,414,845 B2). Harvey et al. as modified by Salmen et al. and Perazzo meets all the limitations of claim 4, but does not disclose that the locking device is a locking screw. Bonet discloses a heat dissipation module with a locking screw for a locking device (312). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the locking device of Harvey et al. with the locking screw taught by Bonet for easy installation and removal (paragraph 0010).

4. Claims 6, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey et al. modified by Salmen et al. and Perazzo, and further in view of Seesemann (U.S. Patent 6,384,733 B1).

- Regarding claim 6, Harvey et al. as modified by Salmen et al. and Perazzo meets all the limitations of claim 1. Harvey et al. further discloses that the heat dissipation module further comprises a temperature-detecting device

for turning one or both fans on or off to control cooling (column 8, lines 1-10). However, Harvey et al. does not expressly disclose that the temperature-detecting device controls the rotational speeds of the fans. Seesemann discloses a temperature-detecting device to control the rotational speed of fans (column 1, lines 35-40). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the temperature-detecting device of Harvey et al. with the temperature-detecting device taught by Seesemann for fine control of temperature and to effectively prevent overheating of electronic devices (Seesemann, column 1, line 20).

- With respect to claim 9, Harvey et al. disclose a heat dissipation module with twin centrifugal fans utilized in a computer server system, that comprise: a panel (18A) disposed on a front surface of the heat dissipation module; a first fan (22) having a first outlet (32) coupling to an inner surface of the panel, and the first fan sucking a part of hot air (56) generated by an electrical equipment and exhausting the part of the hot air out of the heat dissipation module by way of the first outlet and the panel; an air duct (34) coupling to the inner side of the panel and on a top of the first fan; a second fan (24) having a second outlet (40) coupling to a rear side of the air duct, and the second fan sucking another part (58) of the hot air generated by the electrical equipment and exhausting part of the hot air out of the heat dissipation module by way of the second outlet, the

air duct and the panel; a plurality of spring devices (11) for absorbing vibrations caused by the first fan and the second fan and removing an electromagnetic wave (column 5, line 10); and a temperature-detecting device for controlling (column 8, lines 1-10) the first fan and the second fan. Harvey et al. also disclose an upper cover and a bottom cover, where the upper cover and the bottom cover are utilized to couple with the first fan and the second fan. Although Harvey et al. indicate that the dissipation module is designed with the ability to slide and couple to the electrical equipment while the heat dissipation module is being inserted into the electrical equipment (column 4, line 60), they do not explicitly indicate that the edges of the upper cover and the bottom cover are provided with sliding rails on both sides of the first fan and the second fan of the heat dissipation module. Salmen et al. disclose a fan module (10) with edges of the upper cover and the bottom cover provided with sliding rails (figure 5). At the time of the invention, it would have been obvious to one of ordinary skill in that art to incorporate the sliding rails on the edges of the top and bottom cover as taught by Salmen et al., on the heat dissipation module disclosed by Harvey et al. to ensure that the modules are properly inserted and positioned inside the electrical equipment (paragraph 0029). Harvey et al. also do not disclose that the panel disposed on the front surface of the heat dissipation module to be of honeycomb structure, and that the temperature-detecting device controls

the rotational speeds of the fans. Perazzo discloses a heat dissipation module with front panel having a honeycomb structure, and Seesemann discloses a temperature-detecting device to control the rotational speed of fans (column 1, lines 35-40). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the front panel of Harvey et al. with the honeycomb panel taught by Perazzo to increase the volume of airflow through the panel while eliminating safety concerns (Perazzo, column 5, lines 30-45), and to modify the temperature-detecting device of Harvey et al. with the temperature-detecting device taught by Seesemann for fine control of temperature and to effectively prevent overheating of electronic devices (Seesemann, column 1, line 20).

- With respect to claim 11, Harvey et al. further discloses that the heat dissipation module further comprises a locking device (20) to fix to the computer server system after the heat dissipation module is installed in the computer server. (Column 4, lines 60-65).

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey et al. modified by Salmen et al., Perazzo and Seesemann as applied to claim 9, and further in view of Varghese. Although Harvey et al. disclose that the heat dissipation module slides into the electrical equipment, they do not expressly disclose sliding rails on the electrical equipment. Varghese et al., discloses an electrical equipment with rails (18) for slidably mounting electrical modules. At

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the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the sliding rails taught by Varghese et al., in an electrical apparatus that uses the heat dissipation module taught by Harvey et al., for increased ease of installing and removing the module for servicing etc. (Varghese et al., paragraphs 0006-0007).

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey et al. modified by Salmen et al., Perazzo and Seesemann as applied to claim 11, and further in view of Bonet. Harvey et al. as modified by Salmen et al., Perazzo and Seesemann discloses all the limitations of claim 11, but does not expressly disclose the locking device to be a locking screw. Bonet discloses a heat dissipation module with a locking screw for a locking device (312). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the locking device of Harvey et al. with the locking screw taught by Bonet for easy installation and removal (paragraph 0010).
7. Claims 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey et al. modified by Salmen et al., Perazzo and Seesemann, and further in view of Smith et al. (US 6,801,428 B2). Harvey et al. disclose a computer server system comprising a plurality of heat dissipation modules (column 8, line 60 – column 9, line 4) with twin centrifugal fans (22 and 24) disposed in the fixing slots, wherein each of the heat dissipation modules further composes: a panel (18A) disposed

on a front surface of the heat dissipation module (10); a first fan (22) having a first outlet (32) coupling to an inner surface of the panel, and the first fan sucking a part of hot air (56) generated by an electrical equipment and exhausting the part of the hot air out of the heat dissipation module by way of the first outlet and the panel; an air duct (34) coupling to the inner side of the panel and on a top of the first fan; a second fan (24) having a second outlet (40) coupling to a rear side of the air duct, and the second fan sucking another part of the hot air (58) generated by the electrical equipment and exhausting part of the hot air out of the heat dissipation module by way of the second outlet, the air duct and the panel; a plurality of spring devices (11) for absorbing vibrations caused by the first fan and the second fan and removing an electromagnetic wave (column 5, line 10); and a temperature-detecting device for controlling the first fan and the second fan (column 8, line 1-10). Harvey et al. also disclose an upper cover and a bottom cover, where the upper cover and the bottom cover are utilized to couple with the first fan and the second fan. Although Harvey et al. indicate that the dissipation module is designed with the ability to slide and couple to the electrical equipment while the heat dissipation module is being inserted into the electrical equipment (column 4, line 60), they do not explicitly indicate that the edges of the upper cover and the bottom cover are provided with sliding rails on both sides of the first fan and the second fan of the heat dissipation module. Salmen et al. disclose a fan module (10) with edges of the upper cover and the bottom cover provided with sliding rails (figure 5). At the time of the invention, it

would have been obvious to one of ordinary skill in that art to incorporate the sliding rails on the edges of the top and bottom cover as taught by Salmen et al., on the heat dissipation module disclosed by Harvey et al. to ensure that the modules are properly inserted and positioned inside the electrical equipment (paragraph 0029). Harvey et al. do not expressly disclose a server rack installing a plurality of servers thereon; a plurality of fixing slots disposed in a top portion of the server rack, nor do they disclose the panel disposed on the front surface of the heat dissipation module to be of honeycomb structure, or that the temperature-detecting device controls the rotational speeds of the fans. Smith et al. (US 6,801,428 B2) disclose a server rack (10) with a plurality of servers installed on it, with a plurality heat dissipation modules in fixing slots disposed in the top portion. Perazzo discloses a heat dissipation module with front panel having a honeycomb structure, and Seesemann discloses a temperature-detecting device to control the rotational speed of fans. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the computer server system of Harvey et al. with the rack mounted server system taught by Smith et al. to reduce system down-time in the event of malfunction of individual components (column 2, lines 30-55), to modify the front panel of Harvey et al. with the honeycomb panel taught by Perazzo to increase the volume of airflow through the panel while eliminating safety concerns (Perazzo, column 5, lines 30-45), and to modify the temperature-detecting device of Harvey et al. with the temperature-detecting device taught by Seesemann for

fine control of temperature and to effectively prevent overheating of electronic devices (Seesemann, column 1, line 20).

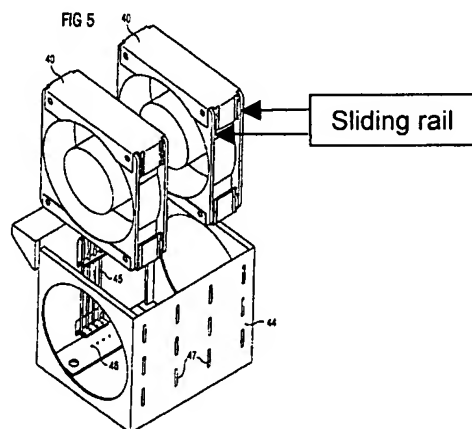
8. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey et al. modified by Salmen et al., Perazzo, Seesemann, and Smith et al. as applied to claim 14, and further in view of Varghese et al.

- With respect to claim 15, Although Harvey et al. disclose that the heat dissipation module slides into the electrical equipment, they do not expressly disclose sliding rails on the electrical equipment. Varghese et al., discloses an electrical equipment with rails (18) for slidably mounting electrical modules. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the sliding rails taught by Varghese et al., in an electrical apparatus that uses the heat dissipation module taught by Harvey et al., for increased ease of installing and removing the module for servicing etc. (Varghese et al., paragraphs 0006-0007).
- With respect to claim 16, Harvey et al. further discloses that the heat dissipation module further comprises a locking device (20) to fix to the electrical equipment after the heat dissipation module is installed in the electrical equipment (column 4, lines 60-65).

9. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey et al. modified by Salmen et al., Perazzo, Seesemann, Smith et al. and Varghese et al, and further in view of Bonet. Harvey et al. as modified by Salmen et al., Perazzo, Seesemann, Smith et al. and Varghese et al. meets all the limitations of claim 16, but does not disclose the locking device to be a locking screw. Bonet discloses a heat dissipation module with a locking screw for a locking device (312). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the locking device of Harvey et al. with the locking screw taught by Bonet for easy installation and removal (paragraph 0010).
10. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey et al. in view of Salmen et al. Harvey et al. disclose a heat dissipation module (10) for dissipating a heat generated from an electrical equipment (abstract), comprising: at least two fans (22, 24), an air duct (34) coupling to the fans; and a cover assembling the fans and the air duct together. Harvey et al. disclose that the heat dissipation module slidably couples to the electrical equipment (column 4, lines 60-61), but does not expressly disclose a sliding rail for enabling the heat dissipation module to be slidably assembled with/disassembled from the electrical equipment. Salmen et al. disclose a fan module (10) with sliding rails for enabling the module to be slidably assembled and disassembled from the electrical equipment (figure 5). At the time of the invention, it would have been

obvious to one of ordinary skill in that art to incorporate the sliding rails on the edges of the top and bottom cover as taught by Salmen et al., on the heat dissipation module disclosed by Harvey et al. to ensure that the modules are properly inserted and positioned inside the electrical equipment (paragraph 0029).

Response to Arguments



Applicant's arguments filed on 12/20/2005 have been fully considered but they are moot or are not persuasive. Described below are the reasons why.

Applicant's arguments regarding sliding rails formed on the edges of upper and bottom cover (page 10, paragraph 2 and 3) is irrelevant to the prior office action, since this is amended matter in the new claims. Regarding figure 8 of Harvey, the applicant is referred to column 4, line 27-32 of Harvey et al. which does indicate that figure 8 is

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only one way to orient the heat dissipation module. Harvey et al. does indicate other orientations and chassis (like workstation, server, etc.) are possible.

Regarding Perazzo, Sessemann, Smith and Bonet failing to teach sliding rails (paragraph 2, page 11). As indicated in the prior office action, these references are used for their teachings of different elements. For instance, Perazzo teaches the advantages of using a panel of Honeycomb construction, Sessemann teaches the advantages of controlling the speed of the fans, Smith teaches the advantages of a Server, and Bonet teaches the advantages of using a locking screw.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

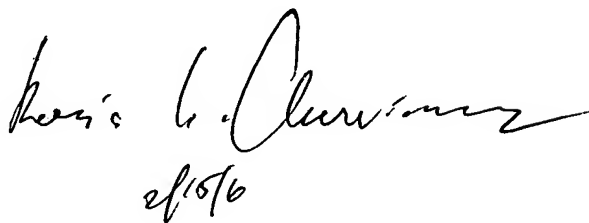
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Biju Chandran whose telephone number is (571) 272-5953. The examiner can normally be reached on 8AM - 5PM. Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached on (571) 272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

bic

BORIS CHÉRVINSKY
PRIMARY EXAMINER



2/15/16